3: Bowen C-4 (1945-1947) 1951 MK2 Maritime Arabs MK2

MARINE INDUSTRIES OF EASTERN ARABIA

RICHARD LEBARON BOWEN, JR.

THE Persian Gulf coast of Saudi Arabia is desolate in the extreme: in many places one travels along the beach for dozens of miles without seeing a living soul. But there is a sprinkling of old coastal towns, whose inhabitants for the most part gain their livelihood from the sea. Among them are Jubail, long a port of entry for the capital city of Riyadh, 235 miles inland; Dammam, seaport for the Qatif and Safwa oases (a deep-water pier has recently been constructed at Dammam); Al Khobar and Oqair, ports for the great oasis of Hofuf (Hasa). To these have been added of late years Arabian American Oil Company settlements at Ras al Mish'ab (a construction camp and port facilities), Nejma (a refinery and camp), and Ras Tanura (pipeline terminus and cargo wharf).

FISHING

Foremost among the marine activities of the older coastal towns is fishing. Although there are far fewer species of fish in the Persian Gulf than in the Indian Ocean, they are present in greater numbers, particularly the porgies, than one might expect in so warm a body of salt water, and fish form a welcome addition to the diet in a land where food is pitifully scarce.

Fishing methods range from a simple hand line to large and complicated fishweirs. On land the hand line is used mainly by small boys, who, like the small fry of any other country, enjoy fishing. Since there is an almost complete lack of jetties and piers, these young fishermen have to stand on the beach and heave their weighted lines as far as they can (Fig. 2). When the fish are running, these youngsters line the shores, and their catch is sometimes sizable. Hand lines are indispensable on every dhow and are thrown out as soon as the boat is in open water.

A more advanced type of fishing uses the throw net—a circular net about 16 feet in diameter made of quarter-inch-mesh netting. The periphery is weighted with small lead weights, then doubled back toward the center and tied at 12-inch intervals to form a continuous pocket some six inches deep. The fisherman walks in knee-deep water at low tide, holding his net —which he has folded and gathered with the perfection of a parachutist—

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Fig. 1—Location map. Inset shows places mentioned in the text.

with both hands and his teeth. When spots a school of fish, he flings the net into the air with one arm (much like a man sowing seed) and a snap of his head. The net opens out flat and drops on the water; the weights carry the outside to the bottom faster than the center. The fisherman then picks up the net by the center, and any fish under it immediately swim toward the edge and are trapped in the pocket. He keeps pulling the center through one hand and folding it up, and when he has finally gathered in the whole net, he carefully removes the fish flopping around in the pocket, puts them in a palm-leaf basket, and starts all over again. 226

The Arabs also use wire and palm-leaf basket fishtraps (Fig. 4). These are oval-shaped, from two to five feet long, with a cone-shaped entrance on each end through which the fish cannot squeeze out. The traps are usually baited with cuttlefish, forbidden to the Arabs by a strict interpretation of 231 262

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FIG. 2—Arab boys fishing with hand lines. When the fish are running, small boys often line the shore by the dozen.

the Koran, but a particularly juicy delicacy from a fish's point of view. The Arabs dot the shallow water with these basket traps at points where feeding appears good; the edges of small coral reefs are favorite spots.

The Arab fisherman never marks his traps with floats as the American lobster fisherman does, because he fears they will be plundered; he must remember the location of each trap. Where he cannot see the bottom, he suspends a float several feet below low-tide level. To tend his traps, this Arab rows his small boat up and down at low tide until he spies his trap or float and hooks it with a pole; in shallow water he sometimes dives for the trap. I once watched a crew of three fishermen off Ras Tanura; they seemed to know the approximate location of each trap in the 30 feet of water, but they spent as much as a quarter of an hour peering into the water to find each submerged float. These men used the largest wire traps I saw in the Persian Gulf, and their catch at times was astounding.

The Arabs on the east coast of Arabia seldom use seines, though on Bahrein Island I saw several drying in the sun. However, large communal seines have apparently been used on the Batinah Coast of Oman; for Thomas[1] relates that "there, a hundred fishermen were hauling ashore a communally owned net, the vast extent of which was marked by distant bobbing floats . . . In contrast, a lone fisherman, far out, monotonously cast his circular hand-net." On the Hadhramaut coast of South Arabia the fishermen also use large seines. At Mukalla I saw a two-and-a-half-inch-mesh net 190 feet long and 20 feet wide; a narrower net had a mesh of five inches. These wide-mesh nets are used for sharks. Farther east on this coast, at Jazir Bay, the fishermen set their seines by swimming out to sea on inflated sheepskins!

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[1] Bertram Thomas: Alarms and Excursions in Arabia, London, 1931, p. 156.

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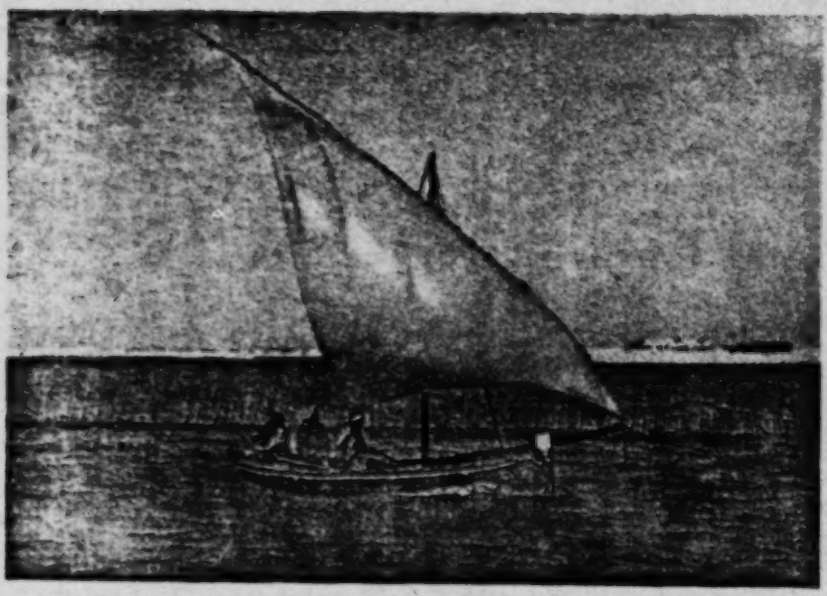

FIG. 3—Arab fishing dhow (*jalbut*) typical of eastern Arabia. The outside wing of a large funnel-type fishweir may be seen directly behind the boat.

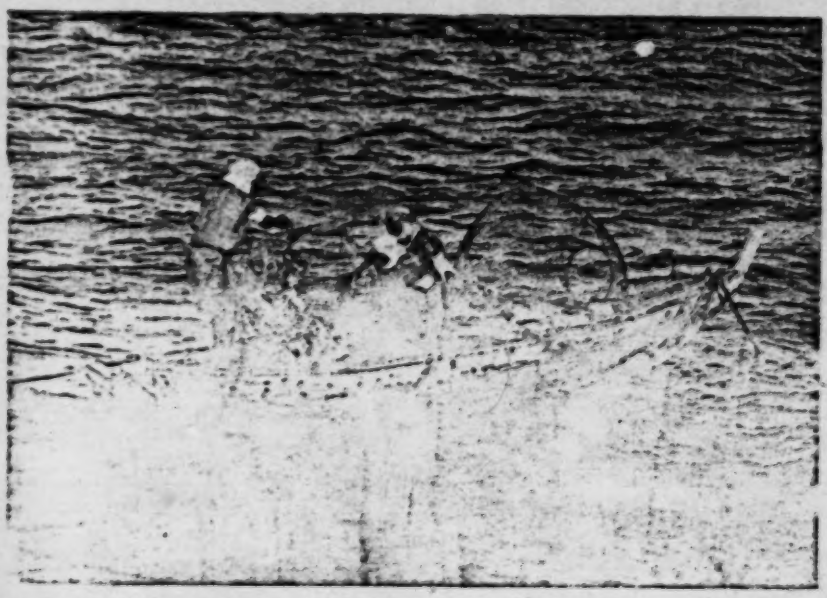

FIG. 4—Fishermen tending their basket fishtraps from a hollow in 30 feet of water. These traps are marked with floats suspended just below low-tide mark.

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FIG. 5—Outside wing of a funnel-type fishweir showing the inside of the secondary enclosure at the left. The primary enclosure, or "head," of the trap is outside of the photograph.

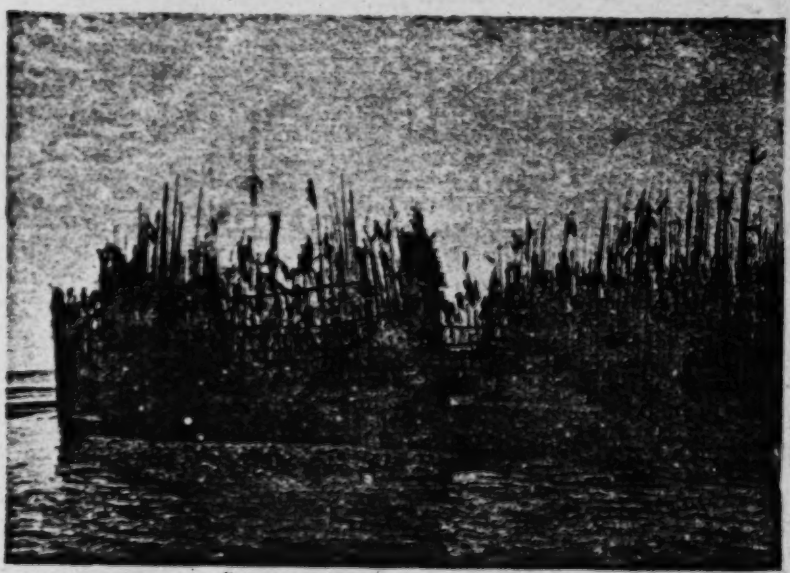

FIG. 6—Entrance to the secondary enclosure of a spear-type fishweir; the "head" is at the extreme left, the leader running to shore at right. The trap is almost completely submerged at high tide.

Fishweirs

[285] 226 The largest catch of fish on the Persian Gulf coast of Saudi Arabia and Bahrein Island comes from huge weirs, made from the stems of palm trees. The Arabs build these fencelike traps by driving a steel bar into the mucky bottom and inserting a palm stem into the hole as they withdraw the bar (Fig. 13); the stems are spaced close enough so that no fish can pass through and are tied together. There are two types of weir: a funnel type and a spear type.

[133] In the Persian Gulf the maximum tidal drop is about eight feet. The fishweirs are built so that at low tide there is only a few feet of water on the offshore end of the weir. Where the ebbing tide sets up a definite current, the funnel type (Fig. 7) is used, placed so that the current washes through the trap. The fish carried along in the current are forced through the funnel into the stockade of the weir, the entrance of which is out of water at low

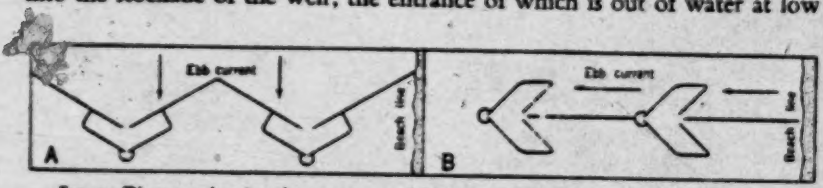

Fig. 7.—Diagrams showing the two types of fishweir. The funnel type (A) catches fish that are washed into the enclosure on an ebbing tide. The spear type (B) is most effective in the case of fish moving parallel to the shore, since the ebbing tide causes only a slight current. Both types are found either singly or in a row, as illustrated.

tide. These weirs are usually built with the central axis parallel to the shore; however, in Tarut Bay many are not near any shore but are set across tidal currents in shallows. Sometimes several traps are set in a row. It is not exceptional for the ebb current in Tarut Bay to reach three knots in some places.

Where the tidal ebb sets up merely a slight motion, the spear type of weir (Fig. 7) is used; the axis is oriented at right angles to the shore. As with the funnel type, several weirs are sometimes set in a row. Most of the fishweirs on Bahrein Island are of this type. The fish swim inshore on a flooding tide and out on an ebbing tide, and thus tend to work into the weirs; these traps are most effective in catching schools of fish swimming parallel to the shore. This type of weir is less effective than the funnel type, because its action is less positive.

Thus when the tide has gone out, the fisherman has a stockade of fish. He enters this stockade, or "head" of the weir, which is 10 to 15 feet in diameter (Fig. 8), with a net hitched to two 3-foot palm-stem poles. Holding

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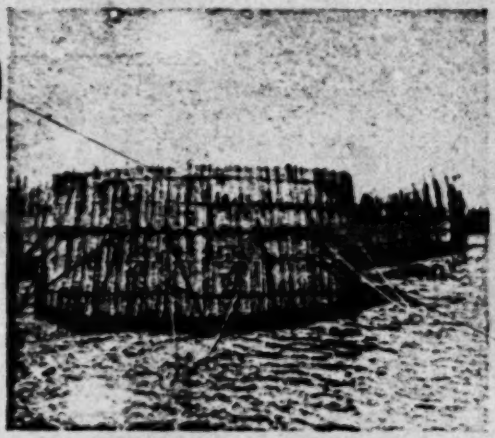

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Pic. 8 (upper left)—The enclosure, or primary enclosure, of a fishweir, encircled with rope and baked down to prevent large fish from breaking out.

Pic. 9 (upper right)—Working around the edge of the enclosure with a fine-mesh hand net. Note the long burlap shirt, frequently worn by fishermen in colder weather.

Pic. 10 (lower left)—Transferring the fish from the hand net into a palm-leaf basket. Note the narrow entrance into the primary enclosure formed by the wings of the secondary enclosure; this entrance becomes narrower toward the bottom.

Pic. 11 (lower right)—Carrying the basket of fish ashore, slung from an oar. Fishweirs in the background.

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226 one in each hand (Fig. 9), he works the net around the edge of the stockade and empties the fish into palm-leaf baskets (Figs. 10 and 11). Most of the fish weigh less than a pound, but it is not unusual for a weir to yield many hundreds of pounds of fish in a tide change, though sometimes only enough are caught to feed the fishermen. The fish are usually sorted into two or three grades and are often sold on the spot. Several times I saw sharks as large as six feet trapped in the stockade; extracting these monsters was a delicate task. Most of the cuttlefish used as bait in the basket fishtraps come from these palm-stem fishweirs.

There seems to be a direct correlation between the amount of fish caught in a weir and the wind velocity, at least on the Ras Tanura peninsula. The Arabs can estimate their catch simply from the atmospheric conditions prevailing before low tide: if the *shamal*, the strong north wind, has been blowing, the haul is sure to be good.

I never saw the effect of the wind fail. In the fall jumbo shrimp, equal to any found in the Gulf of Mexico, are caught in these weirs. If there had been little wind, the catch would be small, but if the wind had been considerable, there were sure to be several dozen nice shrimp. The 10 weirs on the Tarut Bay side of Ras Tanura yielded at the most only several dozen shrimp, most of which came from two funnel weirs; the shrimp that appeared in local markets in large quantities came from the weirs on the flats around Qatif. The shrimp in Arabian markets is sun-dried, so that it can be stored and sold in any season.

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As a rule, the men who work a fishweir get half the profits, and the owner gets the other half. The profits are figured by deducting from the gross return the cost of the workers' food and of the material required to maintain the weir. If a trap fails to produce, the owner sometimes supplies the tenders with cash, which must be repaid later.

In summer the daylight low tide in the Persian Gulf at Ras Tanura is about two feet higher than the minimum, in February. The water does not get low enough in the weirs to trap fish effectively, and the summer catch is therefore poor. Usually trap tenders are assigned to pearl diving and rock mining, possible only in the warmer months; one man is left to collect the small catch and keep the weir in condition. When Ramadan, the great Moslem fast month, falls in summer, the Arabs on Tarut Bay allow their fishweirs to fall into disrepair. It is surprising how fast a weir will disintegrate under even the slight wave action in a sheltered area such as Tarut Bay. In 1945 there were several strong shamals during Ramadan (then the last two weeks in July and the first two in August), which, coupled with the

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FIG. 12—Hand nets drying on the inside wing of a funnel-type weir.

FIG. 13—Mending the weir. Arab in foreground is making a hole with a steel bar, into which a palm stem will be inserted by the other Arab.

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wave action, completely leveled almost all the 10 fishweirs on the Tarut Bay side of the Ras Tanura peninsula. All during the fishing season constant maintenance is necessary (Fig. 13).

Because of its shoal water, Tarut Bay is the only place along the Persian Gulf coast of Arabia where large fishweirs can be built, and one of the best weir locations in Tarut Bay is off the Ras Tanura peninsula. Things went peacefully among the weir tenders and owners until 1945, when the Saudi Arabian refinery project started in high gear. A deepwater oil-loading pier was built on the Gulf side of the end of the peninsula, and a huge pipeway was run from this pier to the refinery, some eight miles away. The pipeway passed close to several of the Tarut Bay fishweirs, and the considerable fill dumped into the bay changed the shore contour slightly

The Arab fishweir owners, ever alert to monetary opportunity, brought suits against the Arabian American Oil Company, asserting that the change in contour had reduced their fish catches and that the company's grading equipment had damaged some of their weirs. After the refinery was partly completed in October, 1945, oil was occasionally spilled into Tarut Bay and provided another complaint for the Arabs, who said that the oil contaminated their weirs. These complaints were such an annoyance to the oil-company executives that they instructed their agents to buy the fishweir rights. By 1947 only three of the original 10 weirs were left; the total price paid was about 72,000 Saudi riyals ($22,000). This money enriched the few Arabs who held the rights to the weirs, but to the Arabs in the Qatif Ras Tanura area the sale was an economic blow, for much of the fish supplied to Hasa Province came from the Ras Tanura traps.

Rock Mining

Another marine occupation is the "mining" of dead coral rock. Two types of coral are mined: *faroush* and *hasa*. Faroush is found on flat bottoms in level layers three to six inches thick. Four-man diving crews, operating from shallow-draft dhows[3] 30 to 45 feet long, pry a huge slab loose with iron bars or by simply lifting its edge. A rope is thrown around the slab, and it is hauled to the dhow, where it is broken up into easily handled pieces (Fig. 14). Diving for faroush can be relatively dangerous: I saw a diver with

[3] For a description of the dhows used in the marine industries of eastern Arabia see R. LeB. Bowen, Jr.: Arab Dhows of Eastern Arabia, *Amer. Neptune*, Vol. 9, 1949, pp. 87–132. The dhows are usually *jalbuts* (see Fig. 3 of the present article), but Bahrein and Kuwait send many *booms* and *sambuks* to the pearl fisheries in addition to the jalbuts. A few small *shoowes* and *battams* are also used by the fishermen (see Fig. 4 of the present article).

4: Bowen C-5 (1950) 1951 MK2 Maritime Arabs MK2

361 a few scattered Bedouin tribes. The Kuwait Oil Company is now operat-
465 ing in high gear, and has apparently offered so many opportunities for natives that *nakhodas* (captains) have difficulty in getting men to sail their ships at the wages they can offer. Sailors never get any regular wages on a dhow, receiving a share of the earnings of the ship only after the voyage is over. Many sailors have apparently found that it is a comfortable feeling to receive a regular wage every week! It is too early yet to tell whether or not the change is permanent.

#39 There has also been a noticeable fall-off in date-bearing Arab dhows
505 sailing to India, but apparently for a different reason. Vaidya[15] states that during the 1943-1944 season, presumably for the first time, sixty to seventy per cent of the Arab fleet that usually brought dates failed to appear because of Arab restrictions on the export of wet dates and because of the high prevailing prices of the dates. Thus, this case is not allied to the present situation prevailing in Kuwait, as during the 1943-1944 season dates presumably were not shipped to India by any other means.

However, even if Kuwait is unable to put its *bhums* to sea, the date crop in the future will still probably be carried out of the Persian Gulf in dhows as usual; it will take time to attain a balance again. Whether the port of Sur rises to the challenge or whether some Persian port takes the trade remains to be seen. The Suris from Oman are logical successors to Kuwait, for in times past they have been noted for taking cargoes at lower rates than the Kuwaiti or any other mariners could afford to, and they have a long maritime history.

It is interesting to note that oil activities in other areas in the Persian Gulf have drastically affected the marine activities of other coastal towns. Over ten years ago, the Saudi Arabian ports of Jubail, Qatîf, and Darin used to send out over a hundred dhows yearly to join the Persian Gulf pearl fisheries. Now if they send out several dozen dhows it is news; the Arabs who used to dive for pearls now have steady jobs with the Arabian American Oil Company. The same has happened on Bahrein Island. The Bahrein *nakhodas* are no longer able to find a multitude of divers who will accept the wage the *nakhodas* are able to offer; thus the Bahrein pearl fleet is only a shadow of what it was a quarter of a century ago.

439 Most but not all Arab dhows load dates first; however, many Omani
226 dhows bring cargoes of dried fish and fish oil, for fishing is particularly good in the waters off Oman, and sharks and large tuna are caught in considerable amounts, both for home consumption and export. Sometimes, however, the Omanis may set out for Africa empty, or with only a partial

[15] K. B. Vaidya, *op. cit.*, p. 207.

cargo of fish if the local supply is not sufficient, and fish their way down the Arabian and African coast, selling fish wherever they can. Then they do the same thing on the way back. Mukalla is a favorite stopping place on the way down to Africa; I have seen dozens of *bedans* from Sur come into Mukalla and lay out their catch of shark or tuna on the beach to dry while they beached their dhows and put a coat of shark liver oil on their hulls (see Plate 18—top and bottom). Shark is a favorite Arab food; the flesh is cut off in strips or slabs and dried, while the liver is saved for its oil. The Arabs have little use for the tails or fins of the shark, but they are all meticulously saved and eventually find their way to China via India.

Thus these fish-bearing dhows from Oman start their trading venture from their home port, carrying a product of the port, and never carry other cargo; they trade fish from Sur to Zanzibar and back. For this trade they apparently always use the primitive *bedan*, usually ranging from fifty to sixty feet in length. The Suris export dates from Oman, or go to Basra for a cargo; when carrying dates they use large *sambuks* and *baghlas*.

In contrast to Arab and Persian ships which sail along the coasts the whole way, whether going to India or Africa, Indian vessels usually sail straight from India across the ocean for South Arabia or Africa with consignments of goods from Indian exporters at specific ports. Only rarely do they carry dates; their usual cargo consists of the products of India. From the Malabar coast they may carry coir rope stuffs, coir matting, teakwood, teak dugout canoes, coconuts, spices, cement, bricks, or tiles, while from Bombay they may pick up cotton piecegoods, groundnut oil, or tea. Most of the Indian ships that voyage to Arabia or Africa come from the Gulf of Cutch; few if any craft from Bombay or the Malabar coast carry this trade today.

In vivid contrast to the Arab date cargo and Indian cargo, which is usually on consignment, the replacement cargo for the rest of the voyage for the average Arab dhow is purchased by the *nakhoda* from the profit made on the date freight, for sale at the best market. After its date cargo has been discharged, the dhow becomes a trader in every connotation of the word, picking up and selling cargoes as she coasts south along the South Arabian and East African coast.

Sometimes the *nakhoda* may pick up a small cargo of partially spoiled dates to unload on the Africans; these the crew may wrap meticulously in fancy wrappers. At Aden the dhow may take on salt, sugar (from Java), rice (from Rangoon), canned goods, hardware, kerosene, or cotton goods and prints, and from the Hadhramaut coast the cargo may be dried shark

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White radishes	100	5
Lemons	40	5
Other fresh vegetables	400	15
10 live sheep	1100	40
15 live sheep and goats	1500	80
	Total Rs.	1502

It should be noted that rice constitutes one-third of the cost. The other great staple at sea—fish—is not listed accurately, as most of it is caught fresh; probably between two thousand and three thousand pounds of fresh fish was eaten. It should also be noted that no charge occurs for water. The dhow will take a tank of bad water rather than pay for it.

The Arab dhow, regardless of its size, always has a fish-line overboard, and it is not uncommon to see half a dozen lines overboard. I have caught many fish myself trailing a line from a dhow in the Persian Gulf. Villiers[88] states that fishing off the whole African coast is particularly good and that it is not uncommon for the many lines trailed from a Kuwait *bhum* to net twenty to thirty large fish a day. The fish not eaten are cleaned by splitting, are pounded in salt, and then hung in the sun to dry; the sailors never bother to scale the fish.

The galley on an Arab dhow is simply a spot on the deck. The stove consists simply of an open-sided box with some sand and cooking stones on the bottom (see Plate 21—top left). The larger the dhow the larger the fire-box. The cook cooks everything here with wood fires of palm wood, brush, or driftwood.

On dhows of South Arabia and the Gulf of Aden ports there is also a bread oven. I have never seen these on dhows from the Persian Gulf or Gulf of Oman. The oven consists of a wide-mouthed pot perhaps fifteen or eighteen inches in diameter; this pot is put inside a barrel about two and one-half or three feet in diameter and the space around the pot is filled with sand (see Plate 21—top right). The barrel is firmly lashed together and then is usually securely lashed to the deck. To bake bread, the cook builds a fire in the bottom of the pot and allows it to burn down to the coals. Then he takes a flat piece of dough like a large pancake and pastes this on the inside of the pot; the heat in the walls of the pot and the coals bake the bread. This is the Arab *khubuz*, one of the staples of the Arab at sea as well as on land.

VI

It is difficult for one totally unfamiliar with the Arab East to understand the economic system of the Arabs. The tenets of Islam prevent any

[88] A. Villiers, 55, p. 150.

5: Harrison D-4 (1912-1924) 1924 M1 Middle East
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871 time and then break up and disappear. Few care whether
185 they live or die. One of the Bahrein sheikhs made a visit
658 to England at the invitation of the British Government about three years ago. On his return he collected nearly a hundred thousand dollars for the founding of a free public school. A large building was projected, but by inefficiency and carelessness, if not worse, the entire sum was spent on the first story of that building. Now the project languishes and seems about to die, purely because nobody cares whether it lives or not. Even Koran schools are few in number and poor in quality. There is nothing like the diffusion of education that prevails in the inland
M desert towns.

463 Although the vast majority of the people in these towns
226 are pearl divers, there are a few fishermen and a smaller number who gain a precarious livelihood as sailors in Arab sailing ships. There are abundant supplies of fish in all these harbors, but fishing is a very unpopular occupation. It is hard, disagreeable work, and the men must frequently be out in the little boats all night. When times are good and the captain's allowances liberal, nobody is willing to fish. When the pearl catch is bad or the price low every one feels poor, many eke out their small resources by this additional work, and fish becomes plenti-
M ful and cheap.

505 There were once many sea-going sail boats engaged in carrying various cargoes from port to port in this district, for the Arabs are bold navigators and can travel in these ships from India to the Suez Canal. They still bring goods from the various East African ports to Arabia, and rarely fail to make these long trips successfully, but the work is hard, and since the steamers of the "Ingleez" have absorbed more and more of the better

[For information on boats and boat equipment and on the pearling industry, see MI1 Kuwait, 1; Dickson, Category 116, pp. 473 to 496.]